Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
C-CAP United States Virgin Islands, St. John 2005-2007-Era Land Cover Change Analysis

1.2. Summary description of the data:
This data set contains the 2005-era and 2007-era classifications of

St. John, United States Virgin Islands and can be used to analyze change.

This data set utilized 14 full or partial ADS40 scenes

which were analyzed according to the Coastal Change Analysis Program (C-CAP)

protocol to determine land cover.

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2005-12-26 to 2007-03-11

1.5. Actual or planned geographic coverage of the data:
W: -64.813587, E: -64.644711, N: 18.375487, S: 18.296723

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Map (digital)

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

    2.1. Name:
        NOAA Office for Coastal Management (NOAA/OCM)

    2.2. Title:
        Metadata Contact

    2.3. Affiliation or facility:
        NOAA Office for Coastal Management (NOAA/OCM)

    2.4. E-mail address:
        coastal.info@noaa.gov

    2.5. Phone number:
        (843) 740-1202

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

    3.1. Name:

    3.2. Title:
        Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

    4.1. Have resources for management of these data been identified?

    4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

    5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible
    (describe or provide URL of description):
        Process Steps:
            - 2010-05-24 00:00:00 - Process_Description This dataset was created by Sanborn.
            This dataset contains the classifications of 2005-era imagery and 2007- era imagery.

It is used for change analysis between these years. The attributes include a from-to change description category. There are 481 classes corresponding to the 481 possible from-to change combinations. In this section of the metadata, the 2005-era classification procedure is described, then the 2007-era change detection classification procedure is described. Finally in the post-processing section, the process of combining the maps to generate a spatial matrix of change is discussed. Early Date (2005-era) Classification: This section outlines the classification procedure for the U.S. Virgin Islands C-CAP product. The IKONOS image tiles utilized for this project were provided by GeoEye as orthorectifed, georeferenced products and were consistent with the quoted 1:12000 spatial accuracy. In conjunction with the IKONOS, Sanborn used LiDAR collected in 2007 for the island. Training data was collected in the field between May 31th and June 5th, 2009. Land cover observations were recorded by analysts. The referenced dataset went through a QA/QC procedure to ensure it met accuracy standards. Image segmentation was completed at multiple scales using the multispectral (2.4 m) imagery in order to group like spectral and textural objects within the imagery. For consistency, the associated impervious data set was incorporated into the segmentation layer as a boundary delimiter. Segments can share boundaries of an impervious surface, but can never overlap an impervious surface. Image segments are classified using a decision tree classifier in See5 software and an iterative nearest neighbor classifier in Definiens software. Nearest neighbor training data is collected through field observations, and analyst photo interpretation/selection. Models are built to refine or reclassify land cover areas by utilizing the wealth of attribute information linked to each segment within Definiens. As with any automated or semi-automated land cover classification there are often inconsistencies in the land cover map. The final step before map finalization was to remove inaccuracies through manual segment labeling as interpreted by an analyst. Sanborn used independent reviewer's comments to further refine the land cover map.

- 2010-05-24 00:00:00 - Attributes for this product are as follows: 0 Background 1 Unclassified 2 Impervious 3 4 5 Developed, Open Space 6 Cultivated Crops 7 Pasture/ Hay 8 Grassland/Herbaceous 9 Deciduous Forest 10 Evergreen Forest 11 Mixed Forest 12 Scrub/Shrub 13 Palustrine Forested Wetland 14 Palustrine Scrub/Shrub Wetland 15 Palustrine Emergent Wetland 16 Estuarine Forested Wetland 17 Estuarine Scrub/Shrub Wetland 18 Estuarine Emergent Wetland 19 Unconsolidated Shore 20 Bare Land 21 Open Water 22 Palustrine Aquatic Bed 23 Estuarine Aquatic Bed 24 Tundra 25 Snow/Ice Ancillary Datasets: Non-IKONOS image datasets used are LiDAR (2 foot point spacing density), DCM (Digital Canopy Model derived from LiDAR), slope, aspect, NWI, NLCD, field-collected points, photo-interpreted points. QA/QC Process: There were several QA/QC steps involved in the creation of this product. There was an internal QA/QC. This was done by viewing the classification frame-by-frame along with the IKONOS imagery, the classification, and high resolution reference imagery. NOAA staff completed a similar review and provided both general and point comments. Late Date (2007-era) Classification: Pre-

processing steps: The ADS40 was provided to Sanborn as a geo-referenced product. Sanborn perfomed a quality control on the imagery to check for pixel dropouts and other image issues. Individual image tiles were combined to create a single image for the entire island. The early date (2005-era) classification was created first using satellite data because at the time it was the most recent, cloud free imagery available. The late date (2007-era) ADS40 became available shortly after the early date classification was completed. The ADS40 imagery was found to have ortho-rectification accuracy. The 2005-era classifications and imagery were geo-rectified to co-register with the ADS40 imagery. Change Detection: Once the images were aligned, the next step was to determine the areas of change between the 2005-era and 2007-era data. Since the 2005-era classification was already complete, it is only necessary to classify the areas of change to create a 2007-era classification of the same specifications. The 2007 ADS40 imagery was segmented with the 2005 land cover classification as a hard boundary delimter. Logical rulesets and thresholding based on the spectral properties of the imagery and the early date classification were used to generate a mask of potential change. The change mask was incorporated into the early date classification to create the draft late date classification. This map was further revised with rulesets and thresholding. The final step before map finalization was to remove inaccuracies through manual segment labeling as interpreted by an analyst. Sanborn used independent reviewer's comments to further refine the land cover map. Post-Processing Steps: A GIS matrix algorithm was run with 2005 and 2007 datasets as inputs. The algorithm generates a from-to file where each combination is uniquely labeled from 1 to 481.
- 2010-05-24 00:00:00 - Metadata imported

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation
The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?
No

6.1.1. If metadata are non-existent or non-compliant, please explain:
Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?

- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/48267

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access
NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://coast.noaa.gov/dataviewer/#/imagery/search/where:ID=4719

7.3. Data access methods or services offered:

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection
The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions
Line and Staff Offices may extend this template by inserting additional questions in this section.